

PATENT SPECIFICATION (11)

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(54) DOMESTIC SWEEPER FOR CARPETS, RUGS, OR OTHER FLOOR COVERINGS

(71) We, MOULINEX S.A., a French Body Corporate of 1, rue Jules-Ferry, 93170-Bagnolet, France, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to domestic sweepers intended for sweeping carpets, rugs or other floor coverings.

Floor coverings of the kind mentioned above, particularly those of synthetic fibre, are increasingly used in modern buildings and entail for the housewife a dally cleaning problem. Mechanical sweepers are available on the market which may be of some use, but which have rather limited effectiveness in certain cases, particularly when it is required to clean floor coverings of non-woven textiles which tend to retain dust through an electrostatic action, and which in addition do not have a sufficiently high coefficient of friction to turn the wheels of the mechanical sweeper at a suitable speed to ensure the effective rotational driving of the brush.

It is an object of the invention to provide a domestic sweeper which is particularly suitable for this kind of cleaning.

According to the invention there is provided a domestic sweeper for carpets, rugs, or other floor coverings, comprising a casing carried by wheels or rollers and having a handle articulated thereto to facilitate movement thereof over a surface to be swept, and within the casing a cylindrical brush mounted opposite an opening in the bottom of the casing at the front end thereof for rotation about a horizontal axis, an electric motor housed in the rear end of the casing and connected to the brush to effect rotation of the brush, and a dust collector, pan adjacent to the brush and located between the brush and the motor, wherein the dust collector pan is removable from the casing.

The driving of the brush by means of an electric motor ensures that it will in all cases have a sufficient speed of rotation to effect

suitable cleaning. Moreover, it is not necessary to move the sweeper to-and-fro continuously throughout the cleaning work. If the apparatus is kept stationary on any spot, not only is this not detrimental to good operation but it also permits a more intensive action at that spot when this is found necessary.

The invention will now be described, by way of example, with reference to the accompanying drawings, in which:—

Figure 1 is a section on line I—I, Figure 2, of a domestic sweeper according to the invention,

Figure 2 is a section on line II—II, Figure 1 after removal of a cover closing the sweeper casing and also the lid of a dust collector pan;

Figure 3 is a section of the dust collector pan taken out of the sweeper; and

Figure 4 is a top plan of Figure 3.

Referring to the drawings the domestic sweeper comprises, in a casing 10, Figure 1, which is carried by four rollers 12 and provided with a handle 14 articulated at 16, Figure 2, a rotary cylindrical brush 18 which has a horizontal axis and is adjacent to a dust collector pan 20.

The brush 18 is situated in the front region of the casing 10, opposite an opening 22 formed in the bottom wall 24 of the casing. The brush is carried by a U-shaped stirrup 26 which is pivotally mounted at 28 in the casing 10. The brush 18 is driven rotationally by an electric motor 30 which has a horizontal axis and is situated in the rear region of the casing 10.

The dust collector pan 20 is situated between the brush 18 and the motor 30. The casing 10 is divided by a vertical partition 32 into two compartments 34 and 36, of which the compartment 34 contains the brush 18 and the pan 20, while the compartment 36 contains the motor 30, whose output shaft 38 transmits its movement to the brush 18 by means of a belt 40 which passes through an aperture 42 formed in the partition 32.

The dust pan 20 can be removed from the

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casing 10. It is placed in a seating formed by the median zone of the bottom wall 24 of the casing 10, while above the pan the top wall 44 of the casing has a sufficiently wide opening to permit the passage of the pan in the upward direction. The opening in the top wall 44 is closed by a removable or pivotally mounted cover 46.

The pan 20 is composed of a hollow body of rigid, air impervious material, for example a plastics material. The rear portion of this hollow body forms a receptacle 48 to receive dust swept up by the brush 18; the front portion of the hollow body, which is integral with the rear portion, forms a dust admission channel 50 which is of elongate form and is defined by inner and outer walls 52 and 54 which embrace the brush 18 and slope upwards towards the receptacle 48. A constricted passage 56 connects the channel 50 and the receptacle 48.

The inner wall 52 is a smooth inclined surface directed tangentially to the brush 18 and the front and rear portions of the pan are connected by a rounded median portion 58.

The outer wall 54 of the channel 50 is inclined downwards in a direction substantially parallel to the inner wall 52.

As can be seen more clearly in Figure 3, the hollow body 20 is formed of two parts 60 and 62 articulated to one another along a horizontal axis by hinges 64. The part 60 forms the bottom of the receptacle 48, the rounded portion 58 one side of the constricted passage 56, and the inner wall 52 of the channel 50. The part 62 forms a lid for the dust pan, covers the receptacle 48, and forms the second side of the constricted passage 56 and the outer wall 54 of the channel 50.

As will be understood, when the sweeper is moved on the ground, being pushed by means of a handle 14 while the motor 30 is running, the brush 18 will pick up the dust and throw it upwards along the inclined inner wall 52 of the channel 50. The dust passes over the rounded portion 58 and falls into the receptacle 48.

When the receptacle 48 is full, the cover 46 can be removed or lifted from the casing 10 to gain access to the pan 20. The pan is then removed, together with the dust contained in it, from the apparatus. For the purpose of emptying the pan the lid 62 is opened by pivoting it about the hinges 64 (position shown in broken lines in Figure 3).

WHAT WE CLAIM IS:—

1. A domestic sweeper for carpets, rugs, or other floor coverings, comprising a casing carried by wheels or rollers and having a handle articulated thereto to facilitate move-

ment thereof over a surface to be swept, and within the casing a cylindrical brush mounted opposite an opening in the bottom of the casing at the front end thereof for rotation about a horizontal axis, an electric motor housed in the rear end of the casing and connected to the brush to effect rotation of the brush, and a dust collector, pan adjacent to the brush and located between the brush and the motor, wherein the dust collector pan is removable from the casing.

2. A domestic sweeper according to Claim 1, wherein the dust collector pan is positioned in a seating formed by the median zone of the bottom wall of the casing and the top wall of the casing is provided with an opening so dimensioned as to permit the passage of the dust collecting pan.

3. A domestic sweeper according to Claim 2, wherein the opening in the top wall of the casing is provided with a removable or pivotally mounted cover.

4. A domestic sweeper according to any one of Claims 1 to 3, wherein the dust collecting pan is made of rigid, air impermeable material and comprises integral rear and front portions of which the rear portion is formed as a dust collecting receptacle and the front portion is formed as the inner wall of an elongate channel the outer wall of which depends from a cover for the pan, said inner and outer walls being arranged to embrace the brush and the inner wall to act as a dust admission guide to said receptacle, and between said rear and front portions a median portion which together with the cover forms a constricted passage through which dust passes to the receptacle.

5. A domestic sweeper according to Claim 4, where the inner wall is connected to said median portion and has a smooth inclined surface directed tangentially to the cylindrical brush.

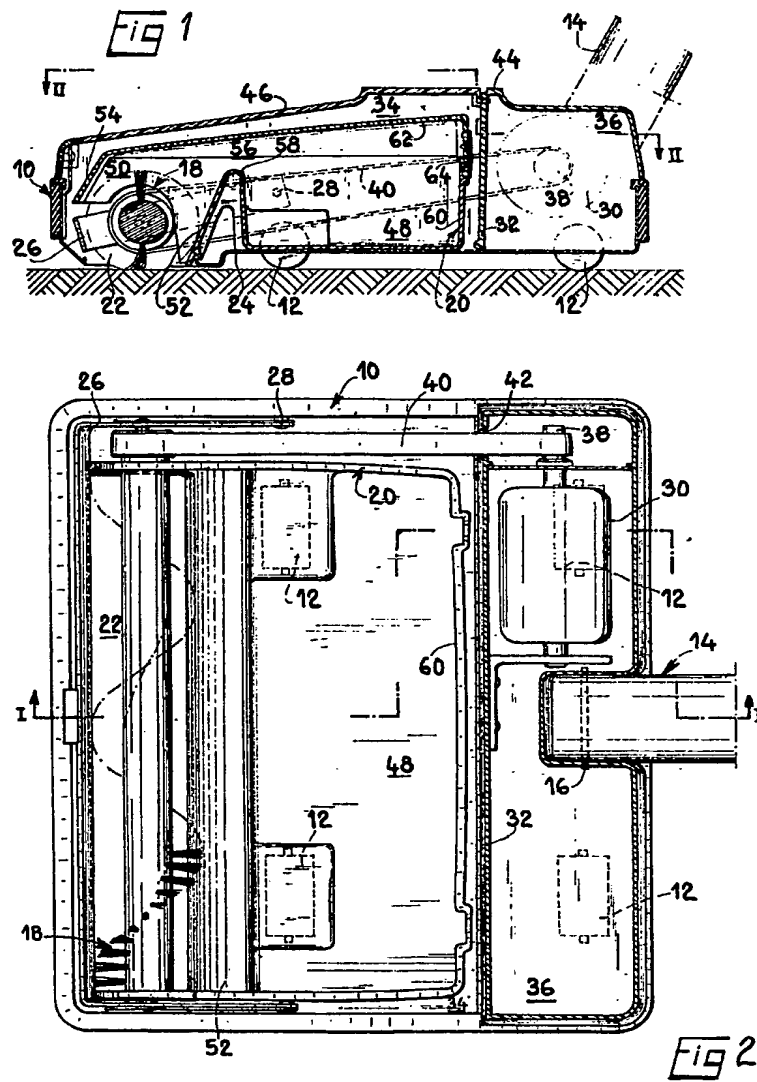
6. A domestic sweeper according to Claim 5, wherein the median portion is rounded and connects the upper end of said inner wall to the receptacle.

7. A domestic sweeper according to Claim 5 or Claim 6, wherein the outer wall is inclined downwards in a direction substantially parallel to the inclined surface of the inner wall.

8. A domestic sweeper for carpets, rugs or other floor coverings, substantially as herein described with reference to and as illustrated in the accompanying drawings.

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